

Title (en)

VAPOR-LIQUID CONTACTING APPARATUS AND PROCESS WITH OFFSET CONTACTING MODULES

Title (de)

DAMPF-FLÜSSIGKEITS-KONTAKTIERUNGSVORRICHTUNG UND VERFAHREN MIT VERSETZTEN KONTAKTIERUNGSMODULEN

Title (fr)

APPAREIL ET PROCESSUS DE MISE EN CONTACT VAPEUR-LIQUIDE AVEC MODULES DE CONTACT DÉCALÉS

Publication

EP 3773964 A4 20210616 (EN)

Application

EP 19777095 A 20190329

Priority

- US 201815940883 A 20180329
- US 2019024846 W 20190329

Abstract (en)

[origin: US2019299120A1] A high capacity and high efficiency co-current and cross-flow vapor-liquid contacting apparatus and process is useful in distillation columns and other vapor-liquid contacting processes. The apparatus is characterized by an arrangement of offset contacting modules in horizontal stages. The modules define a co-current contacting volume and in an exemplary configuration the modules include a liquid distributor and a demister. Half modules comprise downcomers against the shell of the vessel for transporting liquid to the subjacent stage.

IPC 8 full level

B01D 3/32 (2006.01); **B01D 3/28** (2006.01); **B01J 19/32** (2006.01)

CPC (source: EP KR US)

B01D 1/305 (2013.01 - EP KR US); **B01D 3/008** (2013.01 - EP KR); **B01D 3/26** (2013.01 - EP); **B01D 3/28** (2013.01 - KR US); **B01D 3/324** (2013.01 - EP US); **B01D 3/326** (2013.01 - EP KR); **B01J 19/32** (2013.01 - KR US); **B01J 19/32** (2013.01 - EP); **B01J 2219/32234** (2013.01 - EP KR US); **B01J 2219/32408** (2013.01 - EP KR US)

Citation (search report)

- [X1] US 2010162891 A1 20100701 - XU ZHANPING [US], et al
- [X1] US 6682633 B1 20040127 - XU ZHANPING [US], et al
- [X1] US 2001015136 A1 20010823 - LETZEL HUGO MARTIJN [NL]
- [X1] US 5837105 A 19981117 - STOBER BERNE K [US], et al
- See references of WO 2019191593A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

US 10933344 B2 20210302; **US 2019299120 A1 20191003**; CN 111989144 A 20201124; CN 111989144 B 20230404; DK 3773964 T3 20230626; EP 3773964 A1 20210217; EP 3773964 A4 20210616; EP 3773964 B1 20230503; KR 102431564 B1 20220810; KR 20200133791 A 20201130; WO 2019191593 A1 20191003

DOCDB simple family (application)

US 201815940883 A 20180329; CN 201980026680 A 20190329; DK 19777095 T 20190329; EP 19777095 A 20190329; KR 20207030324 A 20190329; US 2019024846 W 20190329